Date: Fri, 29 Oct 93 15:29:35 PDT
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V93 #1284
To: Info-Hams

Info-Hams Digest Fri, 29 Oct 93 Volume 93 : Issue 1284

Today's Topics:

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 29 Oct 93 16:33:12 GMT
From: news-mail-gateway@ucsd.edu
Subject: * SpaceNews 01-Nov-93 *
To: info-hams@ucsd.edu

SB NEWS @ AMSAT $SPC1101
* SpaceNews 01-Nov-93 *

BID: $SPC1101

=========
SpaceNews

=========

MONDAY NOVEMBER 1, 1993

SpaceNews originates at KD2BD in Wall Township, New Jersey, USA. It is published every week and is made available for unlimited distribution.

* STS-58 SAREX NEWS *

The latest in a series of Shuttle Amateur Radio Experiments carried onboard Space Shuttle "Columbia" has been a great success. The Shuttle astronauts managed to make scheduled radio contacts with school groups as well as general contacts with amateur radio operators around the world.

The following packet beacon was sent by Space Shuttle "Columbia" on 25-Oct-93 at 15:14:03 UTC and received by N2NRD:

Thanks for all the great QSO's. KC5AXA, KC5CKM, and I love them.
We're half way through the mission, beginning flight day 8 today.
We are doing human metabolic and cardiovascular experiments in the lab today.
We will also continue with an experiment to quantify the impact human activity in a space ship on the microgravity environment.
We have had spectacular views of our beautiful home planet.
We hope to bring back a large quantity of pictures.
73
KC5ACR

* MIR OPERATING HINTS *

This week: Digipeating through MIR

As some have discovered, it is possible to digipeat though the MIR packet station and use it to connect to other packet stations hundreds of miles away. Unfortunately, the data throughput is pitifully small. WF1F in Billerica, Massachusettes ran a test with Joe WA2GSY in New Jersey. Both stations ran 20 foot 2-meter Yagis with an ERP of approximately 1200 watts. Late one weekday evening, both stations were fortunate enough to find the MIR PBBS with no users on frequency. This is an extremely rare condition. Both stations attempted to directly connect to each other using MIR as a digipeater, and were successful. Every line of text that was sent to each other made it through without error. However, because of retries, acknowledgments, and other packet related overhead, the 120 character per second transmissions were reduced to approximately 1 character for every 2.5 seconds.

The following short message took 4 minutes and 37 seconds to transfer through Mir, and required over 132 packet transmissions. There were probably many more transmissions, but the equipment was not set up to count any packet collisions at either end.

```
CONNECTED to WA2GSY VIA R2MIR [04/18/93  00:25:00]
WA2GSY>:PLEASE CONNECT TO WA2GSY-1 FOR MY PMS
WA2GSY>:Hi miles
WF1F>:HI JOE GOT YOU
WA2GSY>:How are you
WA2GSY>:Glad to see you on
WA2GSY>:Whats up
WA2GSY>:Sure is happy to hear you
WF1F>LETS TRY OSCAR 13 OR SSB
WA2GSY>:Did you get the equip fixed
WA2GSY>:*** DISCONNECTED [04/18/93  00:29:37]
```

Now for the statistics:

```
Packets from WF1F to WA2GSY through MIR: 31
Packets from WA2GSY to WF1F through MIR: 35

Total time 4:37
Total characters sent by WF1F:   39
Total characters sent by WA2GSY: 110
```

Throughput would further be reduced if there were ground stations trying to connect to the PBBS on MIR while other stations used MIR for digipeating purposes. The bottom line is that digipeating through MIR is NOT recommended while others are actively connected to the MIR PBBS. Even under ideal conditions with high ERP, it is not possible to get much data though MIR acting as a digipeater.

Remember, only 1 station can connect to MIR's PBBS at a time. All others must wait.

G. Miles Mann
WF1F @ K1UGM.MA
mann@pictel.com

[Story by G. Miles Mann, WF1F]

* ITAMSAT-OSCAR-26 NEWS *

Sunday October 24th 1993 marked a very important day for ITAMSAT-OSCAR 26. After 28 days in orbit, IO-26 BBS was up and running, and has been accessed

by many amateurs around the world.

The initial reports are very encouraging. Even at this low power setting, around 250 mW, the PSK signal is crystal clear and decoding is very easy.

LW2DTZ copied the following beacon frames from the satellite:

ITMSAT-1>TIME-1
PHT: uptime is 021/04:11:44. Time is Sun Oct 24 13:42:57 1993

ITMSAT-1>AMSAT
24 October 1993 - BBS open to users.
Use standard PB and PG software.
73 de ITAMSAT Command Team

Activity on the BBS has just started, but we have already received many enthusiatic comments. Ground stations that had accessed the BBS as of 24-Oct-93 included: I0LYL (which we thank for his kind words), I6CGE, IK2OYD, IK2VOO, IW2EGC, IW4ASO, DL1TV, EA2CLS, OE3EV, ON6UG, WB5FCO and ZS6BMN.

As always, we are waiting for any report from amateurs around the globe!

73 de ITAMSAT Command Team

[Info via Luca Bertagnolio, IK2OVV]

* VE3ONT EME OPERATION NEWS *

The Toronto VHF Society plans to continue its EME (Moonbounce) tests using the 46-meter (150') dish at the Algonquin Provincial Park, Ontario. Operation will be as follows:

Date (UTC)	VE3ONT TX Freq	RX Freq	Approx. time (UTC)
Saturday, Nov. 6	432.050	432.050-060	0405-1645
Sunday, Nov. 7	1296.050	1296.050-060	0515-1715

The dish can be lowered to about 9 degrees elevation. This decreases the operating time by almost an hour at Moon rise and set. It also limits the ability to work local horizon-only stations.

Equipment: The 432 MHz setup will be significantly better than October's. The receive problem that gave all signals a 120 Hz buzz has been fixed, and the antenna will have about 1 dB more antenna gain due to a redesigned feed helix.

On 1296, VE6ONT will be running about 150 watts output. The feed will be LHCP/RHCP switchable so they ought to be able to work linear and circular polarization stations.

VE6ONT anticipates being able to work stations running 50-100 watts to a long yagi on 432 or 1296. OSCAR-class stations are especially encouraged to try.

Operating suggestions:

Doppler shift will move the apparent VE3ONT frequency a bit. This will make VE3ONT seem to be a little "off frequency," so tune around. Moon echos will seem to be somewhat high (in frequency) at Moonrise and low at Moonset. We will, however, always transmit on .050.

Note that VE6ONT will be operating "split" so please spread out. In the October operation, some stations were frustrated due to calling VE6ONT on their own frequency, where they weren't listening. Try to use good split-frequency HF DXing technique: listen for the stations that VE3ONT is calling and transmit near their frequency when VE3ONT stands by.

Please avoid duplicate QSOs. The goal is to be "first EME" for as many small stations as possible. "Calling again to say Hi" hurts small stations' chances of making a QSO.

VE3ONT will be operating in "contest" mode. They discovered last month that sequenced operation was not fruitful. They will make every effort to work small and horizon-only stations but will not accept skeds.

HF Liaison: HF propagation from the park is extremely poor. VE6ONT will try to check in to the 20-meter (14.345) EME Net during the day and the 75-meter VHF nets (3.818 & 3.843) at night. Previous attempts to do so were not successful, so don't expect much on HF.

QSL information: QSL to VE3ONT ('93 Callbook address ONLY!) or to Dennis Mungham (VE3ASO), R.R. 3, Mountain, Ontario, Canada K0E 1S0. Color photo QSLs are being prepared.

Michael Owen, W9IP
MOWE@SLUMUS
Fax: (315) 379-5804
Dennis Mungham, VE3ASO

[Info via W9IP]

* THANKS! *
==========
Thanks to all those who sent messages of appreciation regarding SpaceNews,

especially:

G0JJO IW1CXZ N8OAR

* FEEDBACK/INPUT WELCOMED *
==========
Mail to SpaceNews should be directed to the editor (John, KD2BD) via any
of the following paths:

FAX : 1-908-747-7107
PACKET : KD2BD @ N2KZH.NJ.USA.NA
INTERNET : kd2bd@ka2qhd.ocpt.ccur.com -or- kd2bd@amsat.org

MAIL : John A. Magliacane, KD2BD
Department of Engineering and Technology
Advanced Technology Center
Brookdale Community College
Lincroft, New Jersey 07738
U.S.A.

<<=- SpaceNews: The first amateur newsletter read in space! -=>>

/EX

--
John A. Magliacane, KD2BD * /\/\ * Voice : 1-908-224-2948
Advanced Technology Center |/\/\/\| Packet : KD2BD @ N2KZH.NJ.USA.NA
Brookdale Community College |\/\/\/| Internet: kd2bd@ka2qhd.ocpt.ccur.com
Lincroft, NJ 07738 * \/\/ * Morse : -.- -.. ..--- -... -..

Date: 29 Oct 93 19:16:48 GMT
From: news-mail-gateway@ucsd.edu
Subject: Andy Z moves on...
To: info-hams@ucsd.edu

To anyone who cares...

Effective immediately I'm leaving NRL, and thus losing my email access at
zwirko@wave.nrl.navy.mil

For the near future I can be reached at:

zwirko@w3eax.umd.edu

More to follow...later.

andy

Zwirko@Wave.NRL.Navy.Mil - Vector Research Co. Inc. - 202.767.2493 me
202.404.7813 fax
Naval Research Lab.
Code 7124
4555 Overlook Ave. S.W.
Washington D.C. 20375-5350

Date: Thu, 28 Oct 1993 18:36:32 GMT
From: nntp.ucsb.edu!mustang.mst6.lanl.gov!nntp-server.caltech.edu!
elroy.jpl.nasa.gov!ncar!uchinews!att-out!cbfsb!cbnews!bigtop!longs!
n2ic@network.ucsd.edu
Subject: FT-990 Comments
To: info-hams@ucsd.edu

Now that you have read all the positive comments on the FT-990, here's
a few negative ones....

Bear in mind that these comments are coming from two avid contesters (myself
and K0KR). I suspect that contesters are far more demanding of their
equipment than the average ham.

1) The SWR/power shutdown circuit is extremely sensitive to amplifier
switching times. When using the FT-990 with my Alpha 76PA, the Alpha is
relatively slow to switch into transmit (100 msec or so ?). During the
switching interval, the FT-990 senses a high SWR, and reduces the power
to about 50 watts. It takes about 3 seconds for the FT-990 to come up
to full output. This does not happen using my Alpha with a TS-940,
TS-850 or TS-950, nor does it happen using the FT-990 with a SB-220.

2) The speech processor is relatively useless. You can only get about 3 dB
of compression before your transmit audio sounds lousy. This has been tried
with several different microphones.

3) The receive audio output response is incredibly variable across the
300 Hz to 3000 Hz range. I can't understand how those Japanese engineers
could have screwed up such a simple circuit so badly ! This problem was
discussed in the QST review, but you have to hear it to believe it.

4) When used with a beverage antenna for 160 meter reception, RF feedback
was introduced on transmit, causing the transmitter to lock into transmit,
putting out an audio feedback "squeel". The only way to fix the problem
was to ground the receive antenna connector using an external relay while

transmitting.

5) When used with a J-com RS-232 to TTL converter, the computer interface
is susceptable to 10 meter RF and stops functioning for several minutes.

The particular FT-990 exhibiting these problems has been returned to Yaesu
service in California. They were unable to fix any of them. (Yes, Chip
Margelli was personally involved at Yaesu).

Steve, N2IC/0

Date: 28 Oct 1993 19:55:29 GMT
From: mustang.mst6.lanl.gov!nntp-server.caltech.edu!elroy.jpl.nasa.gov!ncar!
gatech!howland.reston.ans.net!usenet.ins.cwru.edu!lerc.nasa.gov!
news.larc.nasa.gov!grissom.larc.nasa.@nntp.ucsb.edu
Subject: Full Duplex Kids' HT's
To: info-hams@ucsd.edu

In article <1993Oct28.185320.17835@mixcom.mixcom.com> kevin.jessup
<kevin.jessup@mixcom.mixcom.com> writes:
>In <199310271641.JAA05378@ucsd.edu>
William=E.=Newkirk%Pubs%GenAv.Mlb@ns14.cca.CR.rockwell.COM writes:
>
>>i look at the catalog i have just received from Tiger Software. on Page 5
>>they offer the Sony ICB-1500 "My First Sony Walkie Talkie Set".
>
>>Price is $49.90.
>
>>Anyone know what's in these? They aren't the typical 49 MHz kids walkie
>>talkies. the full duplex part is interesting. maybe something convertible to
>>amateur radio use?
>
>The 49 (and 46) MHz band is used by cordless telephones,
>"baby momitors" and low-power "kiddie-style" walkie talkies and
>personal communication devices. All in the milliwatt range.

Yup, and right next to it is the 6M amateur radio band. Many of the
low-power walkie-talkies can easily be converted to 6M operation, and
with a bit of tinkering to the output stage, many of them will put out
a substantial amount of power, too. (Note that I consider a watt to be
pretty substantial).

I've never seen a full-duplex one, though. It might use a single oscillator
for the transmitter and the LO of the receiver, then rely upon the IF
frequency to deal with the split. That would be crude (and if it were

sufficiently crude to receive LO+IF and LO-IF at the same time, you could
do this easily). If this is the case, you're out of luck. But if they
use two independant sections, you could probably crystal them up for
whatever split you want.
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

Date: Wed, 27 Oct 1993 14:33:58 GMT
From: dog.ee.lbl.gov!agate!howland.reston.ans.net!vixen.cso.uiuc.edu!uchinews!att-
out!cbfsb!cbnews!cbnewst!cbnewsm!jeffj@network.ucsd.edu
Subject: New in San Francisco
To: info-hams@ucsd.edu

In article <msattlerCFFMC0.J0n@netcom.com> msattler@netcom.com (Michael Sattler)
writes:
>Jack Hamilton (jfh@netcom.com) wrote:
>
>: The major ham radio club in San Francisco is the San Francisco Amateur
>: Radio Club. They have a 2-meter repeater on 145.15; antennas are at the VA

The Mt. Diablo Amateur Radio Club (MDARC) meets on the 3rd Friday of
every month at Our Saviour Lutheran Church on Carol Lane in Lafayette.
The meetings start around 8:00pm. We have about 540 friendly members and
all are welcome. We have repeaters on 147.060 (PL100,+), a net that meets
on Thursdays at 7:30pm followed by the ATV net at 8:00pm. Also there is
a net on Sunday night at 7:30pm called the Technical net that yours truely
is net control for. It is on the 147.060 and 147.195 repeaters that are linked
just for this net so that we will cover the whole San Francisco Bay Area.
This net is oriented to talking about the technical aspects of Amateur Radio,
answering any and all questions that have to do with ham radio and any
thing else that comes up. Good luck on your test and 73!

Jeff
--
 Jeff Jones AB6MB | OPPOSE THE NORTH AMERICAN FREE TRADE AGREEMENT!
 jeffj@seeker.mystic.com | Canada/USA Free Trade cost Canada 400,000 jobs.
 Infolinc BBS 510-778-5929 | Want to guess how many we'll lose to Mexico?

Date: 27 Oct 1993 17:28:40 -0700
From: dog.ee.lbl.gov!agate!howland.reston.ans.net!darwin.sura.net!udel!
news.sprintlink.net!agphx.agcs.com!not-for-mail@network.ucsd.edu
Subject: Questions regarding CTCSS, DTMF ???
To: info-hams@ucsd.edu

In article <millerpe.2.00100588@spot.colorado.edu> millerpe@spot.colorado.edu (Peter M. Miller) writes:
>I am new to Ham Radio and I am looking to buy my first HT.

I too am in the same boat (so to speak) - just passed for my No-Code Tech approximately two weeks ago! (Obflamebait: Will I go for code? [*])

>Right now I seem to like the Kenwood TH-78A.

Stopped by HRO - Kenwood seems to be the only one to have literature to hand out at the store (why?)... so most of my questions will be based on the Kenwood, and paging through the HRO catalog. Side note: Interesting how "first impressions" (good or bad) are made regarding how much information can be found about a unit.

>What is CTCSS? I see ads saying the unit has CTCSS encode/decode options.
>What is DTMS squelch and DTMF paging?

I understand the crossband repeat terms, but what does "full duplex cross band operation" mean?

I'll take a stab at it (tell me how far off I am :) This allows the HT to receive a signal on 14x and re-transmit it on 44x, and any signal received on 44x be re-transmitted on 14x.

Another question: This unit can operate with two frequencies in the same band (e.g. UHF + VHF, VHF + VHF, and UHF + UHF). How important / useful is this? Although not mentioned, can the unit do an in-band (correct terminology?) repeat?

In the VHF freqs. it lists the RX as 118 - 173.9995 Mhz, TX 144 - 147.9995 Mhz. What can you hear in the 118 - 144 and 148 - 173 Mhz ranges?

Memory Expansion? Worth it? (You go from 50 memories to 250. 5x increase.) Typically, how many memories do people use on their HTs?

Yes... more questions: When purchasing an HT, do you typically buy additional battery packs? (I'm assuming this would be a yes. :)
If so, what types? High power, Long life? A mix? Why?

If I get a lighter cord, will the batteries recharge while the HT is plugged in? Or, do they charge only when in the recharger?

How well do the HTs stand up to abuse? (e.g. being dropped, shaken, rattled, accidently getting wet)

I think this covers my initial set of questions... now to go and read about

mobile transceivers!

-Dan

[*] To answer the question yes I do plan to go for code. <zzzzziiiipp>
    Phew! It was hot in that asbestos suit. I've been watching this group
    for a couple of months now. :) Why learn code? Why not? It's a
    challenge, gives me another tool to use if I so desire, and who knows,
    I might enjoy it. :) Kinda like learning sign language. A gal I dated
    knew it, and taught it to me. Yea, I was (pitifully) slow, but I could
    "read" and "speak" - great if you happen to be in different cars, on a
    bus where everyone can listen in, in a theater. That was interesting
    too - you could "read" the letters by feeling them! :) Have I used it
    since then, no, but given a little time, I'm sure I could pick it back
    up... The fun part was learning! (Now, if I could find someone to learn
    morse from.. :)

    Anyhow, to drag this back to the topic, I thought it might take me a
    while to learn code - so I just went ahead and tested to obtain a
    license so that I will be able to use some frequencies while I'm
    learning.
--
Dan Romanenko Voice: (602) 581-4663 AG Communication Systems
Dept. Quality Consultant Fax: (602) 582-7111 P.O. Box 52179
Internet: romanenkod@agcs.com Phoenix, AZ 85072-2179
UUCP: ....!ncar!noao!enuucp!gtephx!romanenkod

Date: 29 Oct 93 18:56:35 GMT
From: ogicse!uwm.edu!spool.mu.edu!sdd.hp.com!col.hp.com!srgenprp!
alanb@network.ucsd.edu
Subject: Slowpokes
To: info-hams@ucsd.edu

Derek Wills (oo7@emx.cc.utexas.edu) wrote:

:   The nicest "poetic justice" thing to hear is the person who sends
:   "call??" right when the DX is giving their call. ZD9SXW gave his
:   call after every QSO when he was active for 3 weeks, all CW, and
:   around 30,000 QSOs, and people would still send "call??" at him.

It's amazing how many people call the DX station without being able to
hear him. You can tell because, on big pileups, there will still be
people calling several minutes after the DX station announces hi is
going QRT.

AL N1AL

Date: 29 Oct 93 12:38:00 CDT
From: saimiri.primate.wisc.edu!caen!usenet.cis.ufl.edu!usenet.ufl.edu!gatech!
howland.reston.ans.net!news.moneng.mei.com!uwm.edu!linac!uchinews!cdsmail!
timbuk.cray.com!hemlock.cray.@sdd.hp.com
Subject: Spread Spectrum
To: info-hams@ucsd.edu

In article c3c@altitude.HIP.CAM.ORG, ranfry@CAM.ORG (Marc Lombart) writes:
|
| My knowledge of Spread Spectrum is quite limited, but my
|understanding is that it would probably not be viable as a HAM node,
|seeing as it takes many times the normal bandwidth for each "channel."
|The main use of Spread Spectrum is security, not communication. At
|least, that is what I know from the little I have found on the subject.
|

If you wade through the ARRL study guide for the "extra" class exam you
learn a little about where and in what modes hams are allowed to
use spread spectrum. The exam questions are not to tough though. They
give this little blurb asking you to name the mode, and most of the
answers are clearly wrong. You wouldn't have had to read the manual.

If I remember correctly you are not allowed to use spread spectrum
in any band below 70 cm. There are other rules involved, like identifying
your transmission on one frequency in the band being used. You
must maintain a log of your transmissions.

In article 5I9@netcom.com, wd6cmu@netcom.com (Eric Williams) writes:
|
|Security depends on the algorithm you use to "spread" the signal, so
|you can make it pretty public if you want to. (I think current FCC
|rules limit ham useage to a few well-known algorithms.)

The manual saith, "Four spreading techniques are commony used in
military and space communications, but amateurs are authorized
to use tow of the four techniques: frequency hopping and direct
sequence." (p. 8-18 of the ARRL EXTRA CLASS LICENSE MANUAL.)

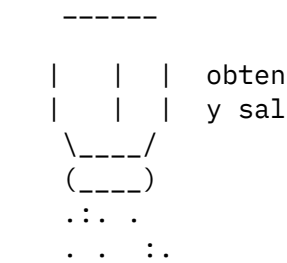
|As far as my limited understanding goes, the main advantage is
|coordination: a set of well-coordinated and efficiently-used
|conventional channels are more efficient of spectrum space than spread
|spectrum, but you can throw a bunch of spread-spectrum users into a

|band with *no* coordination and do almost as well. It really pays off
|when users start moving around or coming and going with no warning.
|That makes it ideal for consumer applications, the advantages for hams
|are less clear.
|

Spread spectrum is supposed to have a big advantage against jammers.
Spread spectrum ignores what is happening on narrow band transmissions.

Sourdough and Ham KG0IO/AE

--David C. Adams   dadams@cray.com
  Statistician
  Cray Research Inc.



Date: 27 Oct 1993 22:53:17 GMT
From: psinntp!posc.org!sys14!waddell@uunet.uu.net
Subject: Spread Spectrum
To: info-hams@ucsd.edu

I am also interested in Spread Spectrum and would be willing to work with other
people on
software/hardware.
73s KB5WXE

In article <2am32v$7g@male.EBay.Sun.COM>, keithhar@eb5ts4.EBay.Sun.COM (Keith
Hargrove) writes:
|>
|>
|> Is there a news group for spread spectrum
|> I would like to do some spread spectrum expermiting
|> but info on ss seems hard to come by
|> I see a blip once in a while in a HAM mag but never a working project
|> and is there a C program to genarate PN codes??
|>
|> thanks
|> -Keith N7QLR
|>

|>
|>

--

==
Dave Waddell	
waddell@posc.org	
kb5wxe@kb5wxe.ampr.org	(713) 267-5103
==

Date: Fri, 29 Oct 1993 07:23:30 GMT
From: rtech!amdahl!amd!netcomsv!netcom.com!jfh@decwrl.dec.com
Subject: Studying in San Francisco
To: info-hams@ucsd.edu

msattler@netcom.com (Michael Sattler) wrote:
>Those of you who sent me such inviting and pleasant email, thank you.
>I haven't gotten back to all of you yet, but I will. Others worried
>that I don't yet have a ticket and I'm playing with HTs. Let me put
>those of you at ease; I haven't touched the PTT button yet. I am
>working my way through the study book...

[...]

>I've modified my Kenwood TH-78A by removing diodes 4 and 5 as
>specified and it's now able to do cross-band and rx 300-399 and
>800-999 Mhz.

Um, how do you know it can do cross-band repeat if it's never transmitted?

--

Jack Hamilton   POB 281107 SF CA 94128 USA
jfh@netcom.com   kd6ttl@w6pw.#nocal.ca.us.na

Date: 29 Oct 93 15:35:08 GMT
From: ogicse!cadreor!fripp!usenet@network.ucsd.edu
Subject: TenTec Century 22
To: info-hams@ucsd.edu

> If anyone could tell me more about them, I would be interested.

Yeah, I have two of them. They are great CW rigs! No frills - simple design.

Very fast QSK (full break-in), as all Ten-Tec rigs are. (Once you have used a rig with very fast QSK rig, it is very hard to go back to semi-break-in. Especially if you are into traffic handling or very fast "conversational" CW.

The unit it very durable and smaller then the Ten-Tec 21. 20 watts out. The Circuit breaker tends to trip over on a > 3:1 swr for protection. Good audio filter. And the receiver sensitivity is very good for weak CW signals. If you are into QRP CW only and don't care about lots of bells and whisles, it is an ideal rig. The only problem I have found, is with the VFO dial. It is a analog dial driven by a "cord" - The cord tends to stretch and the needle no longer "tracks" with the movement of the dial. You can get a replacement cord from Ten-Tec for $2.00. I wish it had a digital freq readout like the Argosy (sp?). I am trying to find a way to add an LCD freq readout to replace the analog dial.

I have worked all over the world on a number of bands with this rig using tuned dipoles - which proves the point once again that you do not need a high priced "rice burner" with all kinds of crazy features. And you do not need a high powered amp. And you don't even need an Ant tuner, if you work within the 2:1 swr points of your ant. (I am against ant tuners because they only give you the false impression that your ant is resonant. lots of power gets wasted in the Tuner itself - This is not acceptable with QRP)

Anyway, if you can find one of these rigs, buy it!

~~~~~~

Dan Trainor Internet: dpt@cadre.com
Cadre Technologies Inc. Voice: 401-351-5950
222 Richmond St. Fax: 401-455-6800
Providence, RI 02903 Morse code: KB1JX

~~~~~~

End of Info-Hams Digest V93 #1284
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****